

WHAT IS CLAIMED IS:

1. A sleeve arranged between an optical fiber and a transmitting or receiving module for optically connecting the optical fiber and the transmitting or receiving module, said sleeve comprising:

5 a light-leading path being in a flat-headed conic shape having a small-diameter end face facing the transmitting or receiving module;

a peripheral projecting portion projecting in a radial direction from another end portion, being on a side of the optical fiber, of the light-leading path; and

an outer tube portion extending in an optical axis direction of the light-leading path from a peripheral portion of the peripheral projecting portion toward the small-diameter end face while covering an entire length of the light-leading path.

2. The sleeve as set forth in claim 1, wherein

the peripheral projecting portion is circularly formed coaxially with the light-leading path, and

the outer tube portion is cylindrically formed coaxially with the light-leading path.

3. The sleeve as set forth in claim 2, wherein

an outside diameter of the outer tube portion is equally formed over an entire length of the light-leading path.

4. The sleeve as set forth in claim 1, wherein

the outer tube portion has a flange projecting circularly in a radial direction from a peripheral surface thereof.

5. The sleeve as set forth in claim 1, wherein

a lens is formed integrally with said another end portion of the light-leading path convexly toward the optical fiber.

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6. The sleeve as set forth in claim 5, wherein

the lens does not project over an optical fiber side end of the outer tube portion.

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7. The sleeve as set forth in claim 1, wherein

an end face of said another end portion of the light-leading path is a light-receiving surface to receive light transmitted by the optical fiber, and

a diameter of the light-receiving surface is larger than a diameter of a light-emitting surface being an end face of the optical fiber.

8. The sleeve as set forth in claim 1, wherein

the small-diameter end face of the light-leading path is a light-emitting surface to emit light transmitted to the receiving module, and

a diameter of the light-emitting surface is smaller than a diameter of a light-receiving surface of the receiving module.

9. The sleeve as set forth in any one of claims 1-6, wherein

the small-diameter end face of the light-leading path is a light-receiving surface to receive light transmitted from the transmitting module, and

a diameter of the light-receiving surface is larger than a diameter of a light-

emitting surface of the transmitting module.

10. A method of manufacturing a sleeve arranged between an optical fiber and a transmitting or receiving module for optically connecting the optical fiber and the transmitting or receiving module, said sleeve comprising:

a light-leading path being in a flat-headed conic shape having a small-diameter end face facing the transmitting or receiving module;

a peripheral projecting portion projecting circularly in a radial direction from another end portion, being on a side of the optical fiber, of the light-leading path; and

an outer tube portion extending in an optical axis direction of the light-leading path from a peripheral portion of the peripheral projecting portion toward the small-diameter end face while covering an entire length of the light-leading path,

comprising the step of:

setting

a first metal mold having a first molding portion being along an external shape of said another end portion of the light-leading path of the sleeve and along an external shape of the outer tube portion and

a second metal mold having a second molding portion made of hard material and being along an inner surface of the outer tube portion and along a peripheral surface of the light-leading path.